

**CLAIMS**

1. (Previously Presented) An apparatus, comprising:
  - a first line receiver coupled to receive first physical layer quality data; and
  - a first line driver coupled to transmit control data that includes an adjustable pre-emphasis and that has a response to the first physical layer quality data, the control data comprises data indicating a comparison of the received first physical layer quality data to a quality standard, the first physical layer quality data and the quality standard are independent of any synchronization data.
2. (Previously Presented) The apparatus of Claim 1 wherein the first physical layer quality data is sensed in real time.
3. (Previously Presented) The apparatus of Claim 1 wherein the first physical layer quality data is dynamically calibrated.
4. (Previously Presented) The apparatus of Claim 1 wherein the first physical layer quality data includes amplitude.
5. cancelled.
6. cancelled.
7. (Previously Presented) The apparatus of Claim 1 wherein the apparatus is mounted in a storage device, and the apparatus couples the storage device to a host computer system.
8. (Previously Presented) The apparatus of Claim 1 wherein the apparatus is mounted in a host computer system, and the apparatus couples the host computer system to a storage device.

9. (Previously Presented) The apparatus of Claim 1 wherein the apparatus couples to a serial bus that comprises two pairs of conductors.

10. (Currently Amended) An apparatus, comprising:

a line receiver coupled to receive physical layer quality data; and

a line driver coupled to transmit control data that includes an indication of frequency rolloff and that is responsive to the physical layer quality data that is independent of any synchronization data;

a quality sensing circuit that comprises:

a physical layer quality sensor sensing a received first signal;

a quality standard; and

a quality compare circuit comparing the received first signal to the quality standard and providing the control data.

11. (Previously Presented) The apparatus of Claim 10 wherein the control data is generated in real time.

12. Cancelled.

13. (Previously Presented) The apparatus of Claim 10 wherein the physical layer quality data include an indication of amplitude.

14. cancelled.

15. cancelled.

16. (Previously Presented) The apparatus of Claim 10 wherein the line receiver is mounted in a storage device and couples the storage device to a host computer system.

17. (Previously Presented) The apparatus of Claim 10 wherein the line receiver is mounted in a host computer system and couples the host computer system to a storage device.

18. (Previously Presented) The apparatus of Claim 10 wherein the line receiver and line driver couple to a serial bus that comprises two pairs of conductors.

19. (Previously Presented) ~~A~~An system~~apparatus~~, comprising:

a first apparatus comprising:

a first line driver transmitting user data and primitives at a first end of a serial bus,  
the first line driver having a control input that controls a transmitted  
physical layer quality at the first end;

a quality sensing circuit, at a second end of the serial bus, that makes a  
comparison of a quality standard to a received physical layer quality that  
includes an amplitude, and that generates control primitives representative  
of the comparison; and

a second line driver at the second end of the serial bus transmitting the generated  
control primitives at the second end, and a first line receiver at the first end  
receiving the control primitives to provide closed loop control of the  
physical layer quality; and

a second apparatus, substantially the same as the first apparatus, the second apparatus  
controlling a second physical layer quality in a direction on the serial bus that is  
opposite to the direction of control of the first apparatus, to provide bi-directional  
physical layer quality control on the serial bus.

20. Cancelled.

21. cancelled.

22. cancelled.

23. (Previously Presented) The apparatus of Claim 19 wherein the serial bus comprises two pairs of conductors.

24. (Previously Presented) The apparatus of Claim 19 wherein the serial bus carries user data between a first functional device and a second functional device.

25. (Previously Presented) The apparatus of Claim 24 wherein the first functional device is a storage device and the second functional device is a host computer system.

26. (Previously Presented) The method of Claim 19 wherein the received physical layer quality further comprises a frequency rolloff.